

## Chapter (non-refereed)

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# Management of change in the hills and uplands: concluding comment

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This seminar has been organized by ITE, sponsored by the Countryside Commission for England and Wales, supported by 6 national organizations, involved 150 participants from national, regional and local organizations and universities, and was based on a joint NERC/ESRC initiative. Why? There were 3 main reasons which were recurrent themes in the papers and discussions:

- i. acceptance that the rate of change in land use is increasing and will continue to do so, with social, economic and environmental consequences;
- ii. recognition that in order to manage change it is necessary to move from sectoral interests and advocacy towards greater interaction and collaboration;
- iii. concern to improve communication and understanding between disciplines and interests, and particularly to improve the exchange of information between research and management.

The papers, poster displays and discussions ranged far and wide in subjects, but there were some important distinctions which can be made and which point to ways forward. Debate on *methods of management* was dominant, and distinguished between those for policy implementation, eg headage payments, improvement grants and designated areas; for planning, eg cost-benefit analysis and optimization models; and for practical management, eg stock control, burning and erosion control. As emphasized by various speakers, the tools already exist for many of the current challenges of management. The problem is primarily that those involved in policy, planning and management are either not aware of the range of methods and their applicability or do not have the expertise available to use them, especially when different disciplines are involved. The solution lies in training and communication.

However, the situation is not quite as simple as indicated for 2 reasons. First, the cause-effect or dose-response relationships are sometimes uncertain, as in defining the level of subsidy that will induce a particular shift in the level and distribution of a product, or in the intensity of grazing required to produce a specified change in the composition of the vegetation. Whilst the general principles may be known, their application to particular

situations or sites must take into account other factors and must also recognize that there is often a long time-lag in response. Second, alternative types and combinations of land use are required, as emphasized particularly by Dr Maxwell. The time to develop and test those can take a decade or more, especially where trees are concerned. Thus, although potential new options can be readily identified, there is a danger that expectations are raised, and not fulfilled, because the methods are not tried and tested. Application of options such as agroforestry or biofuels requires not only the development of suitable management systems, but also the assessment and development of market systems and of training and advice. Again, there is a significant time-lag in response, in this case between research and application.

An important distinction between the papers presented was in the *spatial scale* under consideration: a distinction which, if not clearly related to objectives, can lead to confusion and frustration. At a national and regional scale, information is required with precision but not detail for strategic planning, eg the amount of land suitable for, and sensitive to, a particular use. This requirement contrasts with the local site-specific detail required for management practice, eg the fertilizer application or stock density to conserve a particular vegetation on a particular soil. The objectives, methods and information requirements are quite distinct at the different levels of resolution. An analogous situation is in the finer level of detail required by the research worker, as distinct from the policy-maker, planner or manager.

A main conclusion was, therefore, that communication and an understanding of the needs of different interests and disciplines were key requirements for the future management of the hills and uplands. This does not mean simply more meetings. It will involve the use of a full range of techniques from field demonstrations, through advisory leaflets, to computer models and expert systems. The danger, particularly for the man on the ground, is in receiving too much information! There was some consensus in discussion that effective communication required interpretive and advisory groups to act as an interface, particularly between the research worker and the manager, an interface that benefited from the meeting and from the subsequent contacts that were planned.